

Vermicomposting

Organic Recycling

The Basics

- ❑ What is **decomposition**?
 - The process by which tissues of dead organisms break down into simpler forms of matter.

 - ❑ What is **Organic Matter/ Material**?
 - This is the food in the process. It is alive or it once was. All organic matter decomposes.

 - ❑ What Does **Compost** Mean?
 - Compost is the result of controlled decomposition of organic matter.
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What goes into a compost pile?

- ❑ Items that go in a compost pile:
 - grass clippings and leaves, newspapers, kitchen waste, tea bags, coffee grounds, paper, egg shells, shredded paper or cardboard, fruits and vegetables
 - ❑ Items that can **Not** go into compost pile:
 - **NO ANIMALS/ ANIMAL PRODUCTS**
 - meats, dairy products, animal fat, vegetables cooked with animal fat (these items may attract vectors or make you sick)
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Put these in



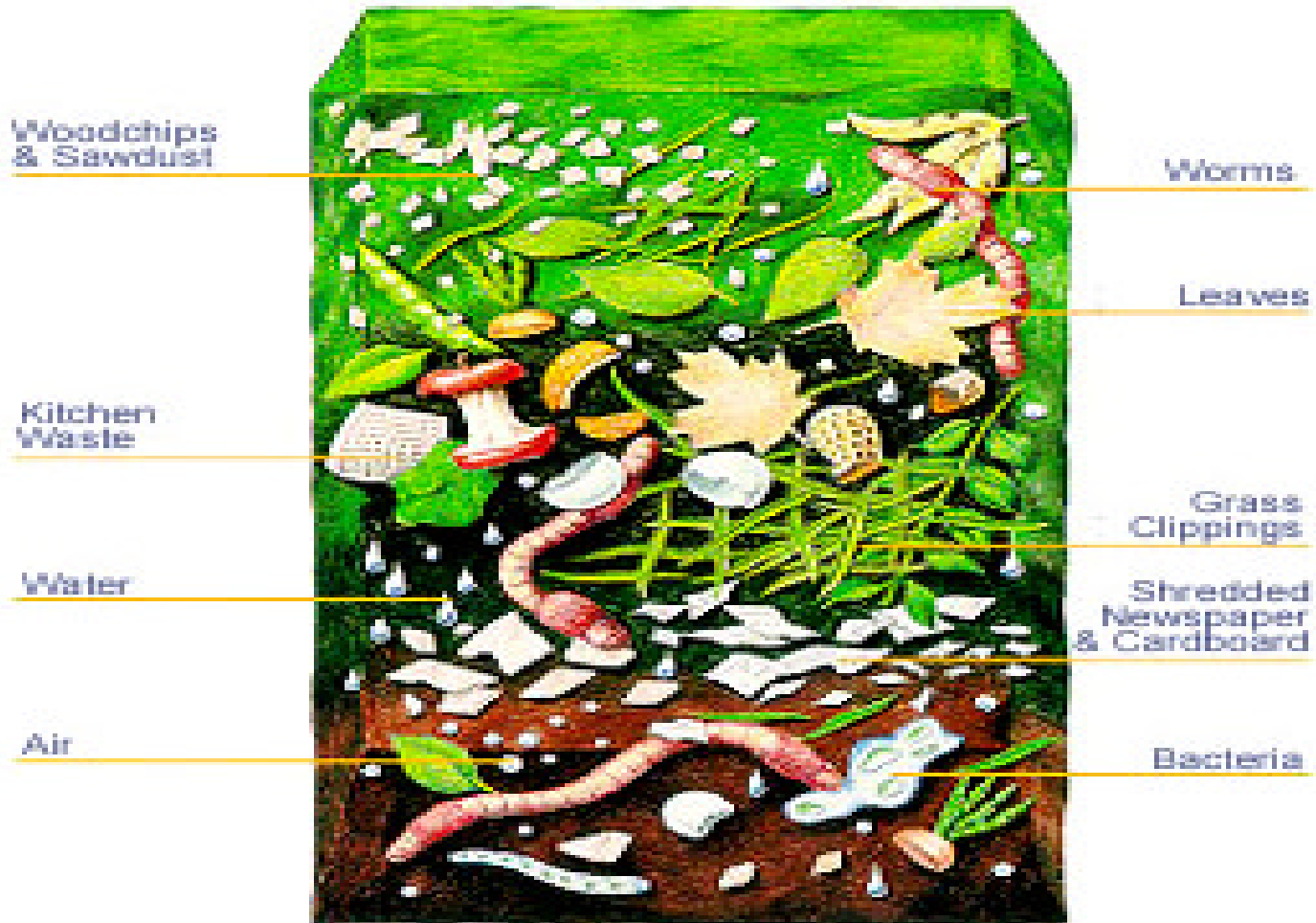
Keep these out



Organic Recycling

- ❑ **Air-** Microorganisms need air to survive. Decomposition happens when microorganisms break down the organic matter.
 - ❑ **Water-** Microorganisms also need water to survive. Worms and other organisms that are important in the decomposition process are comfortable in moist environments.
 - ❑ **Nature's Helpers (detritivores)-** Microorganisms, worms, and insects. They all help break down the organic matter in the compost pile. Microorganisms include bacteria, fungus, and enzymes.
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Compost Diagram



Red Wiggler Worms (*Eisenia Foetida*)

- ❑ These worms are the best decomposers to use (not to be confused with the traditional night crawler).
- ❑ This earthworm is epigeic- they live in the surface litter and feed on decaying organic matter.



Red Wigglers Continued

- ❑ These worms are also known as the redworm, the compost worm or the manure worm.
 - ❑ They should be fed once a week- not too many scraps at a time.
 - ❑ All food should be completely buried by paper, soil, and leaves.
 - ❑ **Do not overhandle worms**, hands should be clean and wet or covered with gloves.
 - ❑ The Red Wigglers can be purchased online at:
 - www.happydranch.com
 - www.planetnatural.com/site/red-wiggler-worms.com
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Worm Anatomy

□ Internal Organs

- **Pharynx**- Throat
 - **Pharyngeal Muscles**- Stringy things attached to pharynx- helps worms swallow.
 - **Esophagus**- Tube that food passes through from pharynx to stomach.
 - **Crop**- Part of the digestive system that appears to be a storage organ for food before it moves to the gizzard.
 - **Gizzard**- Muscular grinding organ of the digestive tract.
 - **Intestine**- This is where digestive juices break down food.
 - **Anus**- Where worm poop or castings are released.
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Various Compost Bins



Building Your Container

- ❑ Drill at least four holes on the bottom of the first container for drainage.
- ❑ Place rocks or some sort of spacer in the bottom of the second container. This container is a catch for leachate.
- ❑ Nestle two 10 gallon Rubbermaid containers (other containers will work, larger is fine).



Building Your Container Part 2

- ❑ Use a drill to create holes for the worms to breathe.
- ❑ You need holes about six inches apart on all four sides of the container and the lid.
- ❑ Wash the interior and the exterior of both containers and the lid with water and mild dish soap.
- ❑ Spread moist soil on bottom.
- ❑ Spread worms over soil.



Building Your Container Part 3

- ❑ Spread a layer of moist leaves on top of worms.
- ❑ Spread a layer of moist, shredded paper on top of leaves.
- ❑ Other bedding materials include yard waste and grass trimmings.
- ❑ Put the lid on the bin
- ❑ Store in a cool dark place (55-77 degrees is ideal).



Using Your Vermicompost

- ❑ When feeding worms, spray the inside of your bin with water to keep things moist.
- ❑ If you do not cover all food completely, you may be inviting vectors.
- ❑ Be sure to feed your worms both greens and browns.

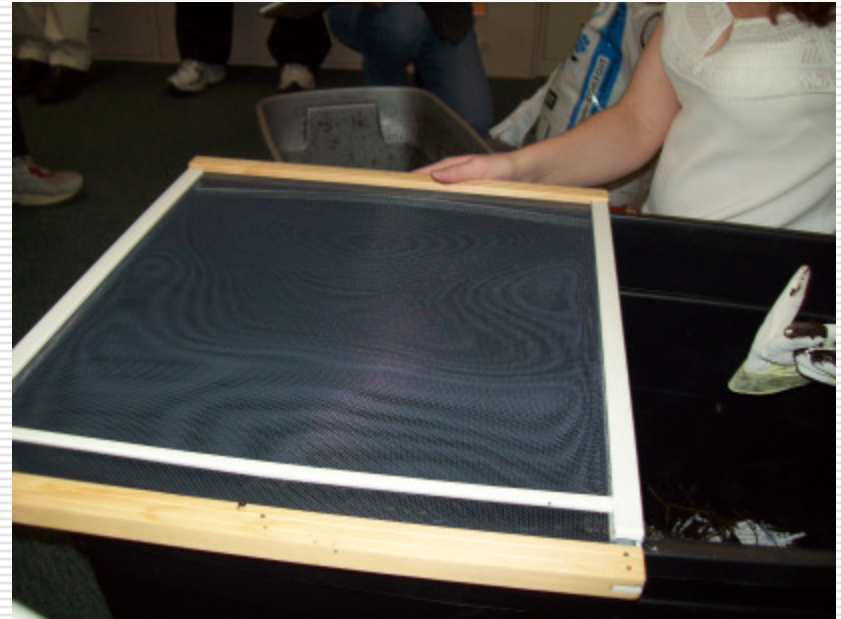


Feeding Directions

- ❑ Do not overfeed one specific food (too much acid can kill the worms).
 - ❑ The worms will generally consume ½ their body weight per day.
 - ❑ When feeding cardboard from toilet paper rolls, moisten it first.
 - ❑ Worms eat small pieces of food faster.
 - Cutting, chopping, or blending fruits and vegetables help.
 - When you have created enough compost you must remove some.
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Harvesting Your Compost

- ❑ You can try using a screen to separate soil from worms.
 - ❑ Or you can pull out clumps of compost and pick the worms out.
 - ❑ Compost and compost tea (the water and worm waste that will drain into the lower container) are great fertilizer for your plants.
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Outdoor Composting Photos



For More Information

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 - ❑ Karyn L. Johnson: School Gardens Coordinator
johnsonk@unce.unr.edu
 - ❑ For more NDEP Lessons:
www.nevadarecycles.gov/main/curr_main_pg.com
 - ❑ For a video of the composting process:
<http://www.youtube.com/watch?v=gbjX2tt-oQw>
 - ❑ For a good article concerning vermicomposting business:
http://www.inc.com/magazine/20060701/coolest-startup_pagen_2.html
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And More Information

- ❑ For a more in-depth power point:
 - www.sustland.umn.edu/maint/docs/Vermiculture.ppt#256,1,Vermiculture.com
 - ❑ FAQs:
 - <http://www.wormmainea.com/FAQ.html>
 - www.greenlivingtips.com/articles/41/1/Worm-farms-and-vermicomposting.com
 - ❑ To purchase other composting products:
 - www.Gaiam.com
 - www.composters.com/vermiculture.php
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